

Timo Schirmer

S/N: 10/709,613

REMARKS

Claims 1-20 are pending in the present application. In the Office Action mailed October 5, 2005, the Examiner rejected claims 1-20 under 35 U.S.C. §102(e) as being anticipated by Frigo et al. (USP 6,891,371).

In the rejection of claims 1-20 as being anticipated by Frigo et al., the Examiner asserted that the cited reference teaches a method as well as a system for acquiring a reference signal with a body coil. The reference, however, makes no such teaching. Specifically, Frigo et al. discloses "a system and method for multi-channel MR spectroscopy (MRS) [that] includes simultaneously acquiring MR signals from multiple coils and processing the MR signals individually to generate multiple sets of MRS results." Abstract. Frigo et al. further teaches that its invention "relates generally to magnetic resonance spectroscopy (MRS) and, more particularly, to a system and method for multiple receiver photon spectroscopy such that a single absorbance spectrum is generated as a combination of data received from multiple receiver coils." Col. 1, Ins. 6-11. In this regard, Frigo et al. discloses that an "MRS scan includes a reference data acquisition in which a signal is acquired from a region or volume of interest." Col. 5, Ins. 7-9. However, contrary to the conclusions reached by the Examiner, the reference fails to teach or suggest the acquisition of such reference data with a body coil.

Frigo et al. teaches that "once non-water suppressed reference data is collected 114, averaging is used to yield an average set of reference data, $r[n]$, wherein n is an index representing each sampled complex data point." Col. 5, Ins. 31-34. The fact that the reference data is determined from data acquired from multiple receiver channels as opposed to a single body coil is further illustrated in Fig. 2. Specifically, as shown, at step 110, MRS data is acquired from multiple receiver channels of an MR system simultaneously. See col. 9, Ins. 37-39. From this multiple receive channel raw data, reference data is collected at 114 and is used to yield an average set of reference data for each receiver coil. See col. 9, Ins. 40-43. Frigo et al. also teaches that this "raw data averaging is done for each coil." Col. 5, Ins. 34-35. Thus, it is clear that the reference teaches the acquisition of reference data with each coil of a multi-coil receiver and the averaging of that reference data to yield an average set of reference data that has been used for the weighting of non-reference data.

The Examiner notes, and Applicant agrees, that the reference discloses a body coil. It is well known that MR imaging systems typically include a whole body coil for RF transmission and RF reception. From the rejection, it appears that the Examiner has presumed that Frigo et al. teaches the acquisition of a reference signal from the body coil simply because the MR system

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disclosed by the reference has a body coil. However, there is no teaching in the reference to support the Examiner's conclusion. In this regard, it is clear that the reference fails to teach or suggest the acquisition of a reference signal with a body coil as well as the acquisition of metabolic signals with a plurality of receiver coils as called for in the claims.

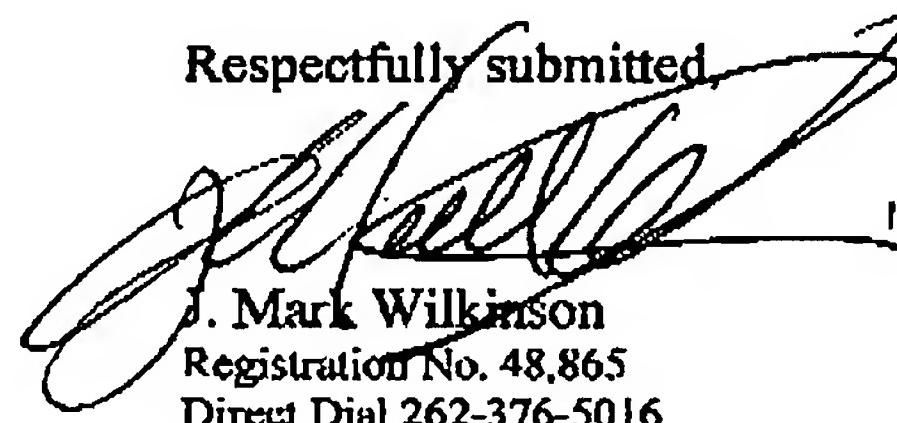
Moreover, with respect to claim 15, one skilled in the art will readily appreciate that a transmit and receiver coil, such as a body coil, is capable of transmitting as well as receiving RF signals, whereas a receiver coil is constructed only to receive RF signals. Frigo et al. teaches receiver coils to acquire multiple channels of RF signals from an imaging volume and determine a reference dataset from those multiple channels of RF signals. Thus, claim 15 is directed to subject matter neither taught nor suggested by the art of record.

Additionally, while Applicant respectfully believes that there are numerous distinctions between that which is claimed in the present application and that taught and/or suggested by Frigo et al., Applicant respectfully reserves the right to disqualify Frigo et al. as prior art against the claimed invention with an antedating declaration.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-20.

Applicant appreciates the Examiner's consideration of these Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



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